

Managing Mobile Crane Hazards

Construction Safety Council

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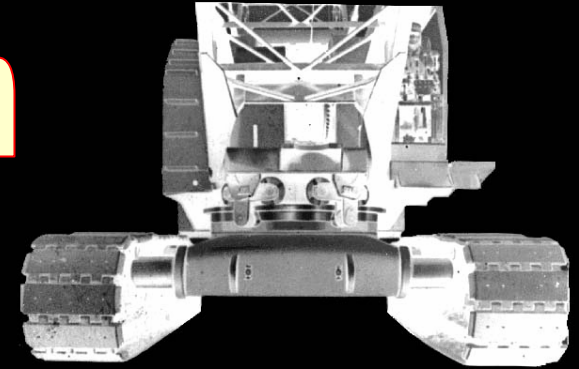
Managing Mobile Crane Hazards

This presentation is recommended for the site supervisor or safety person. Workers around cranes – laborers, carpenters, supervisors – are at more risk than crane operators are for deaths or injuries. Whether you are a crane rental service, a general contractor, or a company whose employees sometimes work around cranes, you have responsibilities. Critical topics include selection of a crane, daily inspections, communication between site management and the crane operator, and supervision of the crane operator. Also covered are basic crane components and their functions, hazards associated with crane operations, and regulations that address the hazards.

Acknowledgements

- Construction Safety Association of Ontario
- 4-Safety.com
- Kenny Construction Company
- Orix Real Estate Equities, Inc.
- McShane Construction Corporation
- Walsh Construction
- Manage Crane Technologies
- Construction Risk Management Services, Inc.
- International Union of Operating Engineers Local 150
- St. Paul Construction
- Signalarm, Inc.
- InsulatUs, Inc.

Introduction



Key Concepts:

- Causes of crane related injuries.
- Crane related incident facts.
- Occupational Safety and Health Administration (OSHA).
- Industry consensus standards for mobile cranes.
- Mobile crane operations and responsibilities.

Crane-Related Injuries

- Electrocution from contacting overhead power lines.
- Caught-in, compressed or crushed in rotating or moving parts and/or the swinging superstructure of the crane.
- Struck by an object, such as a falling, failing or swinging load.

Crane Incident Facts

- At least one crane incident has occurred in each month in 1997- 1999.
- Deaths to workers not operating cranes exceeded crane operator fatalities by 12 to 1.
- Non-fatal injuries to non-crane operator exceeded non-fatal injuries to crane operators by 79 to 23

Source: Crane Accidents 1997 – 1999: A Report of the Crane Unit of the Division of Occupational Safety And Health. 23 May 2000, by Philip Yow.

Occupational Safety and Health Administration (OSHA)

Frequently Cited OSHA Violations for 29 CFR
Subpart N - Cranes

- 1926.550(a)(9); *Swing Radius*
- 1926.550(a)(1); *Manufacturer Specifications*
- 1926.550(b)(2); *ANSI B30.5-1968*
- 1926.550(a)(5) & (6); *Inspections*

Industry Consensus Standards for Mobile Cranes

- *ASME/ANSI B30.5* – characteristics and operations of cranes as well as the inspection, testing, and maintenance requirements.
- *ASME/ANSI B30.9* – installation, operation, inspection, and maintenance of lifting devices, hooks and slings.

Mobile Crane Operations and Responsibilities

- Crane Owner
(Construction company)
- Crane Operator
- Site Supervision



Crane Owner Responsibilities

Include, but are not limited to:

- Ensure that the entire crew is well trained, experienced and competent to operate the particular crane and all related functions.
- Ensure proper maintenance of the crane.
- Ensure that site supervision is aware of their responsibilities and in particular what work must be done to prepare the site for the crane operation.

Crane Operator Responsibilities

Include, but are not limited to:

- Be totally familiar with load charts and all crane functions listed in the operators manual.
- Know all applicable regulations for crane operations.
- Inspecting and maintaining the crane regularly.
- Check site conditions and coordinate all activities with site supervision.

Site Supervision Responsibilities

Include, but are not limited to:

- Providing a well prepared working area for the crane before it arrives on the job.
- Determine the correct load weight and radius and informing the operator (site supervision should know the maximum radius, load weight and lift height of each “pick” before ordering the crane).
- Ensure that all personnel involved in the operation understand their jobs, responsibilities and absolute necessity for 100% safety.

Learning Opportunity

1. The majority of crane related incidents and injuries involve these three (3) things:
2. What two (2) consensus standards are important resources for the safe operation of cranes and the use of rigging devices?
3. What are (2) responsibilities for each of the following:
 - ◆ Crane Owner
 - ◆ Crane Operator
 - ◆ Site Supervisor